

## **BI-WEEKLY UPDATE: PINNIPED ABUNDANCE AND SALMON PREDATION AT BONNEVILLE LOCK AND DAM**

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This is the second status report for the 2018 pinniped monitoring season and summarizes the observed predation and deterrent activities at Bonneville Dam from 11 April through April 25, 2018. Observations will continue through May 31, 2018. A final report will be compiled soon thereafter.

Previous reports and related PMP information can be found at the link below:

<http://pweb.crohms.org/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Pinnipeds/>

*PLEASE NOTE - All data presented here are preliminary as of the status report date. Predation numbers and abundance estimates are unexpanded and will change as data are proofed and analyzed. Final predation estimate data will be expanded to adjust for hours and days not observed as well as “unknown” prey species consumed for the final report. The final report summarizing the results of the 2018 Pinniped Monitoring Program will be available in the fall of this year.*

**PINNIPED ABUNDANCE**

We present abundance data using the maximum number of individuals counted during a comprehensive tailrace point count and interpolated for days not observed. For inter and intra-year comparison of abundance estimates, we report average daily abundance with standard deviation as measures of variance.

***Abundance: 11 April – 25 April, 2018***

Since April 11, 2018, the number of California sea lions (CSL; *Zalophus californianus*) at Bonneville Dam is below the ten year average, whereas the number of Steller sea lions (SSL; *Eumetopias jubatus*) is above the ten year average (Figure 1). The numerically dominate species in the tailrace continues to be the SSL with an average daily abundance of  $26.8 \pm SD 9.5$ , whereas CSL had an average daily abundance of  $4.3 \pm SD 2.6$  (Table 1). No harbor seals (*Phoca vitulina*) have been observed since January 24, 2018.

To date, we have documented 24 SSL and 40 CSL as uniquely identifiable individuals. All uniquely identifiable sea lions have been documented near Bonneville Dam in previous years, expect one CSL which was branded April 25, 2018.

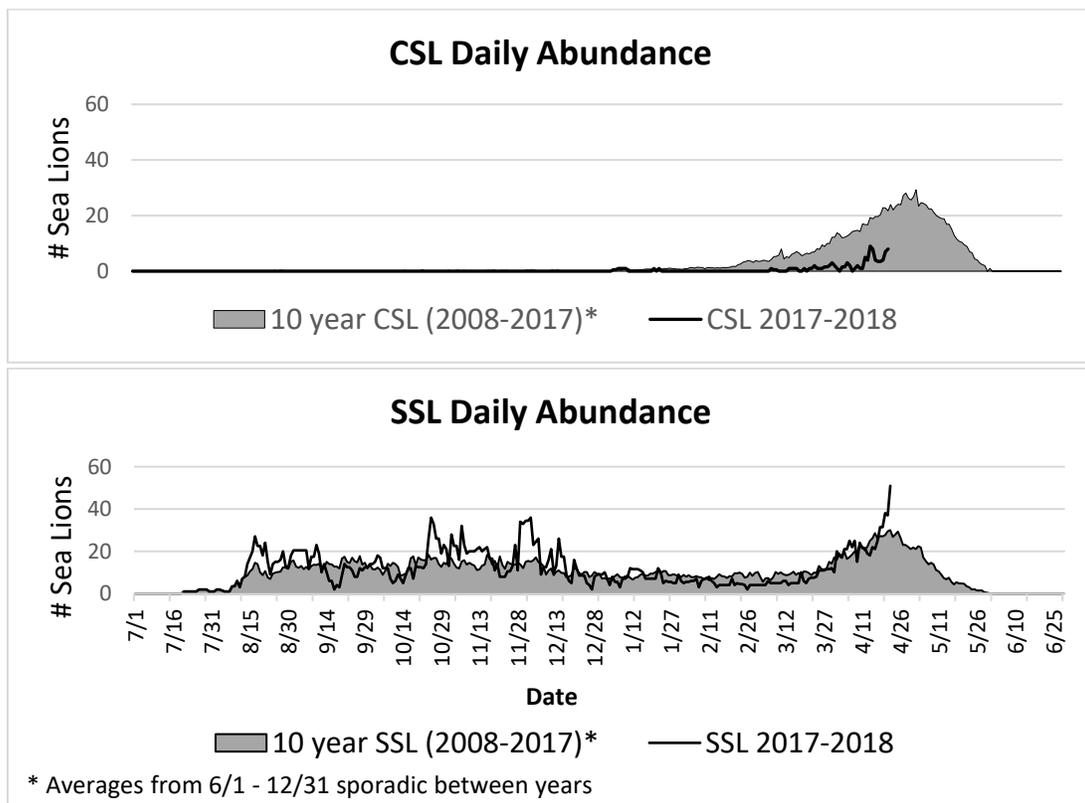


Figure 1. Comparison of estimated abundance of each pinniped species at Bonneville Dam between the 10 year running average and the current year.

Species	$\bar{x} \pm S.D.$	Range	$n = 0$
SSL	26.8 $\pm$ 9.5	18 - 51	0
CSL	4.3 $\pm$ 2.6	1 - 8	0

Table 1. Interpolated daily minimum counts of pinnipeds at Bonneville Dam tailraces between 1 January and 11 April, 2018.

**PREDATION DATA**

A review of the combined salmonid passage during the focal sampling period to date shows that the run is below the 10 year average (Figure 2). However, between 24 and 26 April, 2018, the number of spring Chinook (*Oncorhynchus tshawytscha*) has increased significantly indicating that the run is starting to arrive to Bonneville Dam. This increase in prey will likely continue to bring more predatory sea lions into the Bonneville tailrace area.

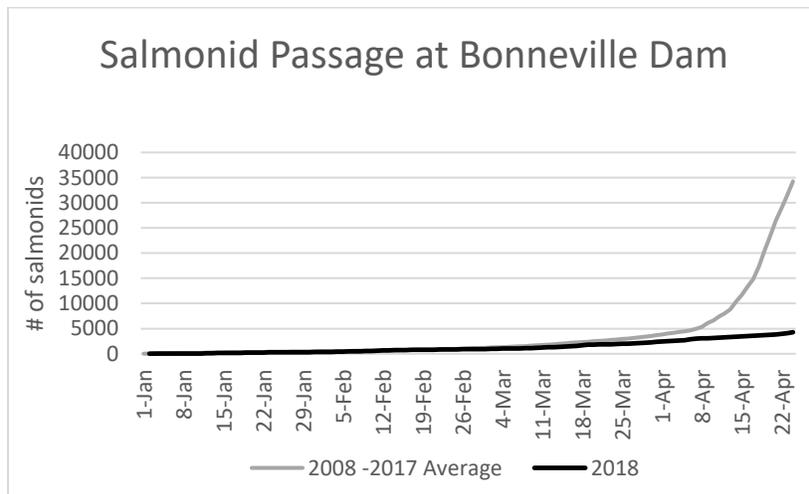


Figure 2. Comparison of the ten year average and current passage of all salmonids over Bonneville Dam.

We present only the raw (unexpanded and unadjusted) predation data. That is, we present only the accounts of fish predation events we have observed and do not account for the number of unidentifiable catches made by each species. Expansion to account for unidentifiable fish catches and adjustment for un-observed hours will be conducted at the end of the season using the same protocols employed in last year’s report.

From 11 April to 25 April 2018, a total of 69 salmon, 15 Steelhead and 24 White Sturgeon (*Acipenser transmontanus*) have been documented being killed by pinnipeds (Table 2).

***Fish Predation: 11 April – 25 April, 2018***

Species	Chinook	Steelhead	Sturgeon	Lamprey	Other	Unknown
SSL	55	12	23	0	1	17
CSL	14	3	1	0	0	4
Total	69	15	24	0	1	21

*Table 2. Observed fish consumption by both species of pinniped at Bonneville Dam from 11 April – 25 April, 2018.*